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Project Skunkworks: Open Polymerase™ v2 – a different protein cleavage site

Creative Work by: Fernando Andrade, M.S., Founder, CEO and Director of the Skunkworks Division.

> tth+ polymerase™

atctgggtaccgacgacgacgacaagATGGAAGCGATGCTGCCGCTGTTTGAACCGAAAGGCCGCGTGCTGGTGGATGGCCATCATCTGGCGTATCGCAC CTTTTTTGCGCTGAAAGGCCTGACCACCAGCCGCGGCGAACCGGTGCAGGCGGTGTATGGCTTTGCGAAAAGCCTGCTGAAAGCAGAAGAAGATGGCTAT AAAGCGGTGTTTGTGGTGTTTGATGCGAAAGCGCCGAGCTTTCGCCATGAAGCGTATGAAGCGTATAAAGCGGGCCGCGCGCCGACCCCGGAAGATTTTCCGC GCCAGCTGGCGCTGATTAAAGAACTGGTGGATCTGCTGGGCTTTACCCGCCTGGAAGTGCCGGGCTATGAAGCGGATGATGTGCTGGCGACCCTGGCGAAAAA AGCGGAAAAAGGACGCTATGAAGTGCGCATTCTGACCGCGGATCGCGATCTGTATCAGCTGGTGAGCGATCGCGTGGCGGTGCTGCATCCGGAAGGCCATCTG AAGGCATTGGCGAAAAAACCGCGCTGAAACTGCTGAAAGAATGGGGCAGCCTGGAAAAACCTGCTGAAAAACCTGGATCGCGTGAAACCGGAAAACGTGCGCGA AAAAATTAAAGCGCATCTGGAAGATCTGCGCCTGAGCCTGGAACTGAGCCGCGTGCGCACCGATCTGCCGCTGGAAGTGGATCTGGCGCAGGGCCGCGAACCG GATCGCGAAGGCCTGCGCGCGTTTCTGGAACGCCTGGAATTTGGCAGCCTGCTGCATGAATTTGGCCTGCTGGAAGCGCCGGCGCCGCTGGAAGAAGCGCCGT GGCCGCCGCGGAAGGCGCGTTTGTGGGCTTTGTGCTGAGCCGCCCGGAACCGATGTGGGCGGAACTGAAAGCGCTGGCGGCGTGCCGCGATGGCCGCGTGCA TCGCGCGGCGGATCCGCTGGCGGGCCTGAAAGATCTGAAAGAAGTGCGCGGCCTGCTGGCGAAAGATCTGGCGGTGCTGGCGAGCCGCGAAGGCCTGGATCTG GTGCCGGGCGATGATCCGATGCTGCCGCGTATCTGCTGGATCCGAGCAACACCCCCGGAAGGCGTGGCGCCGCCGCTATGGCGGCGAATGGACCGAAGATG CGGCGCATCGCGCGCTGCTGAGCGAACGCCTGCATCGCAACCTGCTGAAACGCCTGGAAGGCGAAGAAAAACTGCTGTGGCTGTATCATGAAGTGGAAAAACC GCTGAGCCGCGTGCTGCGCGCATATGGAAGCGACCGGCGTGCGCCTGGATGTGGCGTATCTGCAGGCGCTGAGCCTGGAACTGGCGGAAGAAATTCGCCGCCTG GAAGAAGAAGTGTTTCGCCTGGCGGGCCATCCGTTTAACCTGAACAGCCGCGATCAGCTGGAACGCGCTGCTGTTTGATGAACTGCGCCTGCCGGCGCTGGGCA CAAACTGAAAAACACCTATGTGGATCCGCTGCCGAGCCTGGTGCATCCGCGCACCGGCCTGCATACCCGCTTTAACCAGACCGCGACCGCGACCGGCCGC CTGAGCAGCAGCGATCCGAACCTGCAGAACATTCCGGTGCGCACCCCGCTGGGCCAGCGCATTCGCCGCGCGTTTGTGGCCGAAGCGGGCTGGGCGCTGGTGG CGCTGGATTATAGCCAGATTGAACTGCGCGTGCTGGCGCATCTGAGCGGCGATGAAAACCTGATTCGCGTGTTTCAGGAAGGCAAAGATATTCATACCCAGAC CGCGAGCTGGATGTTTGGCGTGCCGCCGGAAGCGGTGGATCCGCTGATGCGCCGCGGCGAAAACCCGTGAACTTTGGCGTGCTGTATGGCATGAGCGCGCAT CGCCTGAGCCAGGAACTGGCGATTCCGTATGAAGAAGCGGTGGCGTTTATTGAACGCTATTTTCAGAGCTTTCCGAAAGTGCGCGCGTGGATTGAAAAAAACCC CGGTGCCGCTGGAAGTGGAAGTGGGCATGGGCGAAGATTGGCTGAGCGCGAAAGGCcaggacggaggctag

> Tth+ Polymerase™

MHHHHHHSSGLVPRGSGMKETAAAKFERQHMDSPDLGTDDDDKMEAMLPLFEPKGRVLLVDGHHLAYRTFFALKGLTTSRGEPVQAVYGFAKSLLKALKEDGY KAVFVVFDAKAPSFRHEAYEAYKAGRAPTPEDFPRQLALIKELVDLLGFTRLEVPGYEADDVLATLAKKAEKEGYEVRILTADRDLYQLVSDRVAVLHPEGHL ITPEWLWEKYGLRPEQWVDFRALVGDPSDNLPGVKGIGEKTALKLLKEWGSLENLLKNLDRVKPENVREKIKAHLEDLRLSLELSRVRTDLPLEVDLAQGREP DREGLRAFLERLEFGSLLHEFGLLEAPAPLEEAPWPPPEGAFVGFVLSRPEPMWAELKALAACRDGRVHRAADPLAGLKDLKEVRGLLAKDLAVLASREGLDL VPGDDPMLLAYLLDPSNTTPEGVARRYGGEWTEDAAHRALLSERLHRNLLKRLEGEEKLLWLYHEVEKPLSRVLAHMEATGVRLDVAYLQALSLELAEEIRRL EEEVFRLAGHPFNLNSRDQLERVLFDELRLPALGKTQKTGKRSTSAAVLEALREAHPIVEKILQHRELTKLKNTYVDPLPSLVHPRTGRLHTRFNQTATATGR LSSSDPNLQNIPVRTPLGQRIRRAFVAEAGWALVALDYSQIELRVLAHLSGDENLIRVFQEGKDIHTQTASWMFGVPPEAVDPLMRRAAKTVNFGVLYGMSAH

 $RLSQELAIPYEEAVAFIERYFQSFPKVRAWIEKTLEEGRKRGYVETLFGRRRYVPDLNARVKSVREAAERMAFNMPVQGTAADLMKLAMVKLFPRLREMGARM\\ LLQVHDELLLEAPQARAEEVAALAKEAMEKAYPLAVPLEVEVGMGEDWLSAKGQDGG*$

> pwo+ polymerase™

atctgggtaccgacgacgacgacaagATGATTCTGGATGTGGATTATATTATCGGAAGAAGGCAAACCGGTGATTCGCCTGTTTAAAAAAAGAAAACGGCAAATT TAAAATTGAACATGATCGCACCTTTCGCCCGTATATTTATGCGCTGCTGCGCGATGATAGCAAAATTGAAGAAGTGAAAAAAATTACCGGCGAACGCCATGGC GGAAGGCGAAGAAGACTGAAAATTCTGGCGTTTGATATTGAAACCCTGTATCATGAAGGCGAAGAATTTGGCAAAGGCCCGATTATTATGATTAGCTATGCG TTCGCGAAAAAGATCCGGATATTATTGTGACCTATAACGGCGATAGCTTTGATTTTCCGTATCTGGCGAAACGCGCGGAAAAACTGGGCATTAAACTGACCAT GCGGCGAAAACCTGGAACGCGTGGCGAAATATAGCATGGAAGATGCGAAAGCGACCTATGAACTGGGCAAAGAATTTCTGCCGATGGAAATTCAGCTGAGCCG CCTGGTGGGCCAGCCGCTGTGGGATGTGAGCCGCAGCAGCACCGGCAACCTGGTGGAATGGTTTCTGCTGCGCAAAGCGTATGAACGCAACGAAGTGGCGCCG AACAAACCGAGCGAAGAAGAATATCAGCGCCGCCTGCGCGAAAGCTATACCGGCGGCTTTGTGAAAGAACCGGAAAAAAGGCCTGTGGGAAAACATTGTGTATC TGGATTTTCGCGCGCTGTATCCGAGCATTATTATTACCCATAACGTGAGCCCGGATACCCTGAACCTGGAAGGCTGCAAAAACTATGATATTGCGCCGCAGGT GATCCGATTGAAAAAATTCTGCTGGATTATCGCCAGAAAGCGATTAAACTGCTGGCGAACAGCTTTTATGGCTATTATGGCTATGCGAAAGCGCGCTGGTATT GCAAAGAATGCGCGGAAAGCGTGACCGCGTGGGGCCGCAAATATATTGAACTGGTGTGGAAAGAACTGGAAGAAAAATTTGGCTTTAAAGTGCTGTATATTGA AAATTGTGCGCCGCGATTGGAGCGAAATTGCGAAAGAAACCCAGGCGCGCGTGCTGGAAACCATTCTGAAACATGGCGATGTGGAAGAAGCGGTGCGCATTGT CCGCATGTGGCGGTGGCGAAAAAACTGGCGGCGAAAGGCGTGAAAATTAAACCGGGCATGGTGATTTGTGCTATATTGTGCTGCGCGGCGATGGCCCGATTAGCA ACCGCGCGATTCTGGCGGAAGAATATGATCCGAAAAAACATAAATATGATGCGGAATATTATATTGAAAACCAGGTGCTGCCGGCGGTGCTGCCGCATTCTGGA TACAAAGGTGAAGAAAAAGAAGTTGACATCTCTAAAATCAAAAAAGTTTGGCGTGTTGGTAAAATGATCTCTTTCACCTACGACGAAGGTGGTAAAAACCG GTCGTGGTGCTGTTTCTGAAAAAGACGCTCCGAAAGAACTGCTGCAGATGCTGGAAAAAACAGAAAAAAAtag

> Pwo+ Polymerase™

MHHHHHHSSGLVPRGSGMKETAAAKFERQHMDSPDLGTDDDDKMILDVDYITEEGKPVIRLFKKENGKFKIEHDRTFRPYIYALLRDDSKIEEVKKITGERHO
KIVRIVDVEKVEKKFLGKPITVWKLYLEHPQDVPTIREKVREHPAVVDIFEYDIPFAKRYLIDKGLIPMEGEEELKILAFDIETLYHEGEEFGKGPIIMISY <i>F</i>
DENEAKVITWKNIDLPYVEVVSSEREMIKRFLRIIREKDPDIIVTYNGDSFDFPYLAKRAEKLGIKLTIGRDGSEPKMQRIGDMTAVEVKGRIHFDLYHVITF
TINLPTYTLEAVYEAIFGKPKEKVYADEIAKAWESGENLERVAKYSMEDAKATYELGKEFLPMEIQLSRLVGQPLWDVSRSSTGNLVEWFLLRKAYERNEVAF
NKPSEEEYQRRLRESYTGGFVKEPEKGLWENIVYLDFRALYPSIIITHNVSPDTLNLEGCKNYDIAPQVGHKFCKDIPGFIPSLLGHLLEERQKIKTKMKETÇ
DPIEKILLDYRQKAIKLLANSFYGYYGYAKARWYCKECAESVTAWGRKYIELVWKELEEKFGFKVLYIDTDGLYATIPGGESEEIKKKALEFVKYINSKLPGI
LELEYEGFYKRGFFVTKKRYAVIDEEGKVITRGLEIVRRDWSEIAKETQARVLETILKHGDVEEAVRIVKEVIQKLANYEIPPEKLAIYEQITRPLHEYKAIG
PHVAVAKKLAAKGVKIKPGMVIGYIVLRGDGPISNRAILAEEYDPKKHKYDAEYYIENQVLPAVLRILEGFGYRKEDLRYQKTRQVGLTSWLNIKKSATVKF
YKGEEKEVDISKIKKVWRVGKMISFTYDEGGGKTGRGAVSEKDAPKELLQMLEKQKK*
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